AMENDMENTS TO THE CLAIMS

This listing of claim will replace all prior versions and listings of claim in the application.

1. - 48. (Cancelled)

49. (previously presented) An ultrasonic monitor for measuring pulse rate values in a living subject, comprising:

a) at least one source of ultrasonic energy;

b) a gel pad comprised of a thermoplastic elastomer and from about 50 to about 95 % by weight of an ultrasound conductive diluent, said gel pad is positioned to be directly between the energy source and the living subject, said gel pad is characterized by having needle penetration from about 5 to about 300 (1/10 mm) according to ASTM D15;

c) an ultrasonic energy detector; and

d) associated hardware and software for detecting, calculating and displaying a readout of the measured rate values.

50. (previously presented) The ultrasonic monitor of claim 49, wherein:
said gel pad is characterized by having needle penetration from about 25 to about 300.

51. (previously presented) The ultrasonic monitor of claim 49, wherein:
said gel pad is characterized by having needle penetration from about 30 to about 150.

52. (previously presented) The ultrasonic monitor of claim 49, wherein:
said thermoplastic elastomer is a styrene-butadiene-styrene block copolymer.

53. (previously presented) The ultrasonic monitor of claim 49, wherein:
said thermoplastic elastomer is a styrene-isoprene-styrene block copolymer.

54. (previously presented) The ultrasonic monitor of claim 49, wherein:
said thermoplastic elastomer is a styrene/ethylene-co-butylene/styrene block copolymer.

55. (previously presented) The ultrasonic monitor of claim 49, wherein:
said thermoplastic elastomer is a styrene/ethylene-co-propylene/styrene block copolymer.

56. (previously presented) The ultrasonic monitor of claim 49, wherein:
said thermoplastic elastomer is an ethylene/ethylene-co-butylene/ethylene block copolymer.

57. (previously presented) The ultrasonic monitor of claim 49, wherein:
said ultrasound conducting diluent is selected from the group consisting of dibutyl phthalate, dioctyl phthalate, mineral oils, naphthenic oils, paraffinic oils, polybutenes, and vegetable oils.

58. (previously presented) The ultrasonic monitor of claim 49, wherein:
said at least one source of ultrasonic energy, said gel pad, said ultrasonic energy detector and said associated hardware are part of a wristwatch assembly.

59. (previously presented) The ultrasonic monitor of claim 49, wherein:
the source of ultrasonic energy and the ultrasonic energy detector are located within a first module and communicate by wireless transmission with the hardware for displaying a readout of the measured rate values.

60. (previously presented) The ultrasonic monitor of claim 59, wherein:
said first module is part of a wristwatch.

61. (previously presented) The ultrasonic monitor of claim 59, wherein:
the hardware for displaying a readout of the measured rate values is housed in a second

module.

62. (previously presented) The ultrasonic monitor of claim 61, wherein:

the second module is part of a wristwatch.

63. (previously presented) The ultrasonic monitor of claim 49, wherein:

the source of ultrasonic energy and the ultrasonic energy detector are located within a first module and are hardwired to the hardware for displaying a readout of the measured rate.

64. (previously presented) The ultrasonic monitor of claim 63, wherein:

said first module is part of a wristwatch.

65. (previously presented) An ultrasonic monitor of claim 49, wherein:

the source of ultrasonic energy and the ultrasonic energy detector are held in place by a head band.

66. (previously presented) The ultrasonic monitor of claim 49, wherein:

the source of ultrasonic energy and the ultrasonic energy detector comprises first and second piezoelectric crystals positioned at an angle to each other, the angle determined based on the distance of the source of ultrasonic energy to a target.

67. (previously presented) The ultrasonic monitor of claim 66, wherein:

the first piezoelectric crystal is energized by an original ultrasound frequency signal;

the original ultrasound frequency signal is reflected off said target and received by the second piezoelectric crystal; and

the received ultrasound frequency signal is higher or lower than said original ultrasound frequency signal depending on direction and speed of fluid flow.

68. (previously presented) The ultrasonic monitor of claim 67, wherein:

the original ultrasonic frequency signal has a frequency of 2 MHz or lower.

69. (previously presented) The ultrasonic monitor of claim 67, wherein:

the first and second piezoelectric crystals are positioned in a wristwatch proximate to a radial artery of a subject.

70. (previously presented) The ultrasonic monitor of claim 67, wherein:

the first and second piezoelectric crystals are positioned proximate to an ulnar artery of a subject.

71. (previously presented) The ultrasonic monitor of claim 67, wherein:

the first and second piezoelectric crystals are inclined at a roof angle relative to each other of between about 0 and 60°.

72. (previously presented) The ultrasonic monitor of claim 67, wherein:

the first and second piezoelectric crystals are inclined at a roof angle relative to each other of between about 5 and 45°.

73. (previously presented) The ultrasonic monitor of claim 67, wherein:

the first and second piezoelectric crystals are separated by a distance of between about 0.5 and 20 mm.

74. (previously presented) The ultrasonic monitor of claim 67, wherein:

the first and second piezoelectric crystals are separated by a distance of between about 1.0 and 10 mm.

75. (previously presented) The ultrasonic monitor of claim 49, wherein:

the source of ultrasonic energy and the ultrasonic energy detector are positioned within a module that is inclined relative to a target.

76. (previously presented) The ultrasonic monitor of claim 75, wherein:
an inclination of the module results from an angular shape of the gel pad.

77. (previously presented) The ultrasonic monitor of claim 76, wherein:
the gel pad has a trapezoidal cross-sectional shape.

78. (previously presented) The ultrasonic monitor of claim 76, wherein:
the gel pad has a triangular cross-sectional shape.

79. (previously presented) The ultrasonic monitor of claim 49, wherein:
the hardware comprises a demodulator configured to convert a Doppler shift of a reflected ultrasound energy into a voltage.

80. (previously presented) The ultrasonic monitor of claim 79, wherein:
the demodulator comprises an FM demodulator.

81. (previously presented) The ultrasonic monitor of claim 79, wherein:
the demodulator comprises an AM demodulator.

82. (previously presented) The ultrasonic monitor of claim 79, wherein:
the demodulator comprises an RF mixer or a Gilbert cell.

83. (previously presented) A method for detecting pulse rates in a living subject, comprising:
providing an ultrasonic monitor, said ultrasonic monitor comprises:

a) at least one source of ultrasonic energy,

b) a gel pad comprised of a thermoplastic elastomer and from about 50 to about 95 % by weight of an ultrasound conductive diluent, wherein said gel pad is characterized by having needle penetration from about 5 to about 300 (1/10 mm) according to ASTM D15;

wherein said gel pad is positioned directly between the energy source and the living subject,

c) an ultrasonic energy detector, and

d) associated hardware and software for detecting, calculating and displaying a readout of the measured rate values; and

contacting said ultrasonic monitor with the living subject at the point where the pulse is to be measured.

84. (previously presented) The method of claim 83, wherein:

said living subject is a human.

85. (previously presented) A method of claim 83, wherein:

said contacting includes contacting said ultrasonic monitor to the subject on the radial or ulnar artery.

86. (previously presented) A method of claim 83, wherein:

said pulse rates are selected from the group consisting of heart rate values, blood flow rate values, fetal heart rate values, and fetal blood flow rate values.

87. (previously presented) The method of claim 83, wherein:

the source of ultrasonic energy and the ultrasonic energy detector are provided in a module, separated by a distance of between about 0.5 and 20 mm and inclined relative to one another at a roof angle of between about 0 and 60°.

88. (previously presented) The method of claim 87, wherein:

the module is inclined by resting on an angular shape of the gel pad.

89.-104. (Cancelled)